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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/737,029	12/14/2000	Raymond B. Edelman	67397-006PUS1	7897

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Minneapolis, MN 55402

EXAMINER

SANDERSON, JOSEPH W

ART UNIT	PAPER NUMBER
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3644

MAIL DATE	DELIVERY MODE
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06/21/2011

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/737,029

Applicant(s)

EDELMAN ET AL.

Examiner

Joseph W. Sanderson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 May 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12, 14-20 and 22-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-12, 14-20 and 22-24 is/are rejected.
- 7) ☒ Claim(s) 9 and 25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-8, 10-12, 14-20 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winfree et al. (US 6 439 503) in view of Early et al. (US 6 382 957).

Winfree discloses pulse detonation wave engine having a plurality of detonation banks, each bank having a plurality of detonation chambers for receiving fuel/oxidizer mixture from a source, and ignited by laser subsystems generating a plurality of optical pulses (as generally depicted in Fig 1), however does not disclose an laser transport subsystem for distributing the pulses from an independent and positioned apart ignition subsystem to the chambers in a repeated fashion.

Early discloses a laser ignition subsystem for a pulse detonation wave engine using optical pulses from an independent and positioned apart source to the chambers in a repeated fashion via optical fibers and multiplexing devices (as seen in Fig 6, 10 is remote from the chambers and provide optical pulses for ignition) to provide a compact, durable laser system by providing a single laser source for one or more ignition chambers (abstract).

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It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Winfree to use a remote laser source and laser transport subsystem as taught by Early to provide a compact, durable laser system by providing a single laser source for one or more ignition chambers.

Allowable Subject Matter

3. Claims 9 and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

4. Applicant's arguments filed 13 May 2011 have been fully considered but they are not persuasive.

In response to applicant's argument that Winfree teaches away from the separate and positioned apart igniters, a preference for one arrangement is not a disparagement of other arrangements. "Disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments." (MPEP 2123)

In response to applicant's argument that neither Winfree nor Early discloses the sequential detonation, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. The modified system of Winfree would

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provide the capability for sequential detonation, particularly since “[w]hen properly timed, the pulse detonation cluster 11 will run smoothly and will have very little bypass air” (col 5, lines 38-40).

It is further noted that "sequentially" detonated clusters are detonated at different times *by definition* (sequential: following; subsequent; consequent), rendering the argument that Winfree does not teach “simultaneous” detonations moot.

5. Applicant’s arguments, see page 3, filed 13 May 2011, with respect to claims 9 and 25 have been fully considered and are persuasive. The rejection over USC 103(a) of claims 9 and 25 has been withdrawn.

Conclusion

6. The primary reference used above, Winfree, was filed 10 July 2000, which was within a year of the instant application’s filing. A proper affidavit or declaration under 37 CFR 1.131 would be viewed favorably.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph W. Sanderson whose telephone number is (571)272-6337. The examiner can normally be reached on M 6:30 am - 11:30 am, T-F 6:30 am - 300 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy D. Collins can be reached on (571)272-6886. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. W. S./

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/Tien Dinh/

Primary Examiner, Art Unit 3644